A Most Original Thinker

JAMES C. MALIN ON HISTORY AND TECHNOLOGY

by Thomas Burnell Colbert

Malin has forgotten more history than most folks could ever learn." So said George L. Anderson, the longtime head of the Department of History at the University of Kansas, of his mentor, friend, and colleague, James C. Malin. Indeed, Malin was a prolific academic: he wrote nineteen books and more than ninety articles as well as numerous professional papers and book reviews. Additionally, he directed ninety-seven master’s theses and seven Ph.D. dissertations during his forty-two years on the faculty at the University of Kansas. However, despite his productivity, much of his scholarship has been ignored, overlooked, and unused by other scholars. This situation resulted in part from his decision to publish his last thirteen books privately; thus, they were not widely disseminated. Moreover, as Robert Galen Bell stated in his doctoral dissertation on Malin, "few historians are as perplexing, as difficult to understand, as knowledgeable in so many areas of

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James C. Malin, photographed in front of his home in 1964.

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history, or as controversial as Malin.\textsuperscript{3} One of those topics was the historical role of technology, and his scholarship in that realm deserves acknowledgment.

Malin was born in North Dakota on February 8, 1893, but grew up in Kansas. He received a B.A. in history from Baker University in Baldwin City, Kansas, in 1914; a master's in history from the University of Kansas in 1916; and the first Ph.D. in history from that institution in 1921. That same year he accepted a position on the history faculty at the University of Kansas from which he retired in 1963. Thereafter, Malin remained in Lawrence pursuing research and writing for several more years until his death on January 26, 1979.

During his long career Malin received some recognition for his efforts. For fifty years he was a member of the board of directors of the Kansas State Historical Society and served for many years as associate editor of the \textit{Kansas Historical Quarterly}. He was elected president of the Society and was twice president of the Kansas History Teachers Association. He also enjoyed professional prominence outside Kansas. In 1943 he was elected president of the Agricultural History Society, and over the years he served on the editorial board of the \textit{Mississippi Valley Historical Review} and on committees of the American Historical Association, American Association of Geographers (to which he was elected to membership), and the American Studies Association. He was listed in \textit{Who's Who in America}. In 1962 Baker University gave him the L.L.D. degree, and in 1973 a festschrift, \textit{Essays in American History in Honor of James C. Malin}, was published.\textsuperscript{4} Despite such professional acknowledgment, Malin's writings and ideas, as previously noted, were often dismissed or ignored by many of his fellow historians. Nonetheless, as Homer Socolofsky of Kansas State University has written, Malin was "one of the most original thinkers of his generation."\textsuperscript{5} And especially since the 1970s Malin's contributions to historical thought have been awarded some recognition. The Western History Association made him an honorary life member in 1971, and the following year a session of papers at that group's annual meeting centered on Malin's work. Since then two other historical gatherings held sessions on Malin, and articles have been published on his life and ideas, including memorial remarks. In these presentations Malin was acclaimed for his work on agricultural history, especially his pioneering work in population and quantification studies for which he has been called the "father


\textsuperscript{5} Homer E. Socolofsky, "Malin, James Claude," 702.
of the New Rural History. He also has been acknowledged for his ecological approach to the study of the grasslands—the Great Plains and prairies—as a region. Richard White, one of the leading contemporary environmental historians, has called Malin the "likely founder of modern environmental history."

Malin also can be remembered as an outspoken critic of Frederick Jackson Turner’s frontier thesis and of the historical relativism/subjectivism of Charles Beard and Carl Becker.

Malin, however, hardly receives mention by his admirers or critics for his views on technology as a historical component. Moreover, not only do most commentators on Malin completely bypass discussing his views on technology, but historians of technology have not drawn upon Malin’s work. For example, Malin is not mentioned in Eugene S. Ferguson’s Bibliography of the History of Technology nor is he referenced in the indexes of the journals Technology and Culture or Isis. Such oversight warrants correction.

Before looking at Malin’s approach to the historical role of technology, his definition of “history” should be examined. “History,” he wrote, “is concerned with time, space, and change. It is concerned with the unique person, with the unique event, and with their combination.” The historian should use all available evidence to present an understanding of the historical moment and in doing so trace the past in the same way that the people of that time understood their reality. Thus Malin wrote:

One essential of an adequate history is the reconstruction, so far as possible, of the point of view of the people of a given period who were looking into the unknown future, who were bewildered, and probably as much as any subsequent generation, about what the unknown future would bring.

The historian must allow for all of the various forces—personal, physical, and cultural—that influenced those historical agents and approach a period and place in history with an understanding of its “cultural totality.” The historical scholar not only needs to have a grasp of the diverse influences envisioned through hindsight but also to know what the people of that time believed to be true.

One of the influencing factors of history is technology. But while none would deny its place in human history, few American historians of Malin’s generation or before attempted close examination. Malin, on the other hand, was someone who did. Why Malin grasped the importance of technology derived in part from his own youthful experiences when his father left farming and became the manager of a hardware store. At that time the impact of mechanization on farming impressed Malin, who had occasion to set up or repair machinery and to observe farmers making innovations on their equipment. In graduate school his interest was enhanced by Professor Frank Melvin, who in an effort to define the Industrial Revolution argued for the importance of mechanical power. All these influences consequently enticed Malin’s curious mind and contributed to his encompassing view of historical variables.

Acknowledgment of Malin’s grasp of the importance of technology in human history leads to another question: how did he define “technology”? Writing in 1960 he said, “The term technology includes all man—

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ner and ideas and social institutions, and the relative efficiencies for particular purposes of differentiations in the ways of life for competing groups." A year later, in Confounded Rat About Napoleon: Reflections Upon Science and Technology, Nationalism and World Depression of the Eighteen-nineties and Afterward, his definition was more elaborate:

If science is man's attempt to make intelligence effective in finding adequate explanations of nature, including man himself within nature, then technology is the application of that knowledge, the devising of instruments or tools to make it useful—social institutions and machines. Man's contriving brain and skilful hand seek out new ways of doing things, new relations among members of society, and new perceptions about the earth by which he turns latent but existent properties into new natural resources."

In this expanded definition, an important aspect of Malin's concept of humans' relationships with nature and their created technology is based on the idea of "latency" or potentiality that man can find in nature and learn to use through new technology. Therefore, it is not new land but new ideas with which new technology could be essentially tied that constitutes "the controlling fact of history.""

Indeed, Malin lamented that historians were not looking at history with an eye to scientific and technological information. Writing in 1950 in Grassland

Historical Studies: Natural Resources Utilization in a Background of Science and Technology, Malin asserted that "consideration of such material is largely neglected" by historians and "few historians have been geographically-conscious or technology-conscious or science-conscious." In that book Malin focused on the early development of Kansas City in the context both of its geographical region and of national change. He examined the impact of technology, arguing that in the complex historical milieu most important in fostering the growth of Kansas City were communication/transportation advances. In the town's development steamboats and "animal powered vehicles on ridge roads" had to compete with railroads. "Thus, technological change enhanced cultural options." Moreover, Malin argued that a truly national—unified—United States was created during the era of the Civil War. This, he said, was a revolution. How did it come about? Malin offered that conspicuous aspects of foundations of this change were "scientific and technological relationships: Science in relation to natural resources; the communication revolution in terms of mechanical power applied to the movement in space of persons, materials, and intelligence; and the conflict of power based on land versus sea power."

In a later study, The Contriving Brain and the Skillful Hand in the United States (1955), Malin mostly discussed technological development, especially of railroads, during the mid-nineteenth century, and in doing so he remarked on how the historian must ap-

18. Malin, Grassland Historical Studies, 96.
19. Ibid.
20. Ibid., 322.
proach such study. For one, the historian’s “presentism must be neutralized so completely that he can share with the people of that time the novelty and wonder of the technical innovations of the day and together with them look into their unknown future with the prejudices, risks, anxieties, and hopes that conditioned them.” Additionally, he argued against determinism. Humans have choices, and some technological possibilities were rejected. Therefore, to have a “full understanding of the selections made, some attention is due the material that was discarded.” And these parts of the past “in any adequate study of a culture as a whole . . . must be investigated and evaluated.”

Malin also noted that innovation was as important as technological knowledge. For example, the use of rails for transportation existed before the locomotive; likewise the steam engine existed before the locomotive. Human innovation put the two together at a later date and thereby initiated a great transportation change. He explained his viewpoint in this way: “We can develop a certain line of change about so far and we’ve reached a limit of the development of that particular combination. Then maybe we can eventually find new or different combinations that will establish another level . . . which may provide the bases for a whole unexpected and new type of combination.” At the same time, the historian cannot forget that some cultural technology was merely delayed in its use, newly innovated, or permanently rejected. Malin wrote in The Grassland of North America: Prolegomena to Its History (1947), specifically referring to “the communications revolution” of the latter 1800s but with remarks that can be extrapolated to looking at technological change in general, “the historian needs to reorient somewhat his usual view of technology. It is not the date of the first invention that is historically important, but the date, the period, at which the innovation became sufficiently perfected as to be applied widely and effectively in changing the manner of life of a region or the world.”

As noted, Malin had a strong interest in agricultural and rural history, and in that realm he discussed the development, role, and impact of technology. He especially found fault with Turner’s agriculturally based frontier thesis with what he saw as a closed-space interpretation of history: the view that with the end of unsettled land in the United States— the closing of the frontier—an era of American history ended and with it went individualism and democracy as heretofore had been known. Malin found this concept defeatist and deterministic—and therefore wrong! Malin said that in a productive sense new land had never ended for “Each new stage in agricultural and transportation technology has made available for exploitation additional land. Land utilized for one purpose in one stage becomes available for a different or more intensive use in a later stage of development.”

Malin furthermore stated that Turner’s views were associated with those of British geographer H.J. Mackinder whose ideas were based on using obsolete technologies. Malin accused Mackinder of having, so to speak, technological myopia. “Mackinder,” Malin stated:

in planning for the future based his policy science on ideas and technology already on the eve of obsolescence. He did not fully recognize that the revolutionary innovation being ushered in by the internal combustion engine not only introduced a new order of magnitude in land locomotion but also made possible a new era of air power.”

In other words, new technologies—human knowledge and creations—can use previously untapped natural products or can alter how presently employed ones are utilized. “In that context,” Malin asserted, “there are no known limits to natural resources, unless the admission is made that man’s contriving

22. Ibid., 60.
23. Ibid., 36.

lifestyles fostered by the environment of the Plains had not occurred as abruptly as Webb contended. In all, he questioned Webb's objectivity.

The Rockefeller Foundation later sponsored two conferences devoted to appraising Webb's contentions, and consequently Malin waded into this controversy. Malin considered Shannon's critique somewhat ill-informed, and he found vagueness in explaining the concept of geographical regionalism mixed with disputable points coming from both Webb and Shannon. Eventually he would conclude that his own writings, especially Winter Wheat and the Golden Belt of Kansas; A Study in Adaption to Subhumid Geographical Environment (1944) and The Grassland of North America presented a broader, more in-depth, science-based ecological method of understanding the history of the Plains as a geographical region than did Webb's. He also took issue with Webb's cultural view that the Plains were finally settled by whites due to the necessary inventions of the windmill, barbed wire, and the six-shooter. Malin said that Webb's interpretation was based on geographical determinism, which he rejected, opting instead for "possibility," which he defined as "the same technique applied to more than one kind of environment where it possessed a different cultural value in each; and more than one technique applied in the same environment." Malin noted that the windmill had been invented in Europe. Its origin had no relationship to the Great Plains, and


32. Malin, The Grassland of North America, 265. For Malin's comments on Shannon's views, see 239-64.
even there it became usable only after the technology was refined with more efficient mechanisms, cheaper steel, and mass production. Malin likewise offered critical examinations of other components considered essential to settling the Plains, such as barbed wire, firearms, housing, and livestock breeds.33

In all, Malin attempted to bring together knowledge of the natural sciences, spatial relationships, and human actions and beliefs to create a composite, encompassing understanding of the Great Plains grasslands. Consequently, Robert P. Swierenga, one of Malin’s admirers, has stated, “It is this synthesis of science, technology, and history—applied in a significant regional setting—that Malin seemed to be his primary contribution.”34

While Malin adamantly opposed the idea that historical study should be used for advocating or justifying a contemporary political policy or that historians as such can be predictive, he nonetheless envisioned his own times during the 1940s as a new age emerging: the air age. In it were new mediums of communication—radio, television, and aircraft. Additionally, advances in print technology offered more reproduction and dissemination of intelligence. In a sense, Malin suggested, all of these developments reopen space.35 At the same time, aluminum and other light metals and alloys and plastics were found usable in new products, and their sources were scattered about the earth. And new needs for these resources and materials were intertwined with worldwide transportation and trade.36 Here, too, cooperating technologies provided the nexus in this set of relationships. As a result of his understanding of this increasingly technologically complex culture, Malin reflected on its effect on Americans:

He [the American] is absorbed definitely... in machines—the mastery of inanimate forces—and in power, both the unlimited potential of mechanical and personal power, in the sense of the influence that machines enable him to wield over the world and his fellow man. Correspondingly, there is a diminished sense of personal responsibility. . . . At any rate, mechanization is more, much more, than providing men with tools; it reorient[s] the personality of man himself.”37

A decade and a half later, Malin expressed related thoughts with regard to understanding the impact of technology specifically on economic developments on the Southern Plains:

Technology afforded the realization of new potentials within the area, and in its relationship with other areas—oil and gas developments, irrigation—grown cotton, automobile and air communications, the beginning of the atomic age, rare minerals, and new commercial exchange relations between the Pacific Coast and the interior east of the continental divide. Science and technology and many innovations induced by the mechanization of society during the mid-twentieth century require new explanations related to the new resources brought into the horizon of utilization.38

Overall, Malin saw technology as profoundly altering American society and life and in doing so forcing the historian to confront new factors that changed social and economic relationships. At the same time, he did not offer any moralistic appraisal of these changes. Not only did he espouse uncompromising philosophical stands on the obligation of the historian always to look at the past objectively, but he also averred that “science and technology in themselves were neutral—merely tools. Choices about their use were in the province of ethics and conviction about the place and purpose of Man in the Universe.”39 Malin also concluded that “the creative work of the world is primarily the achievement of the little people, each of whom makes his contribution, usually unheralded, in the line of duty, as part of the task of daily

33. Ibid., 259–77.
34. Malin, History and Ecology, xxvi.
36. Ibid., 109.
37. Malin, “Mobility and History,” 189.
living." For Malin, most discoveries came from a synthesis of the "folk process" of innovation, which he examined in *Winter Wheat in the Golden Belt of Kansas*, especially in, for example, his discussion of the adoption of the lister by wheat farmers in Kansas. The lister was developed for cultivating corn but came to be used to prepare the soil for planting wheat. However, for this tillage chore the lister had to be modified with "large discs, heavy construction, and a new type of axle bearing for the discs." These changes came about through the tinkering and common sense of mundane farmers, and that was the point that Malin labored to make.

Clearly, Malin devoted a significant part of his thought and research to trying to understand the historical role of technology in American culture, and he did so before the subdiscipline of history of technology had emerged. As he once wrote that "few scientists are trained in history and social science, and like-wise, few historians and social scientists are trained in science," he also might have added that few historians during much of his career knew much about technology. Indeed, this limitation was well exhibited in Thomas J. Pressly's review of *The Contriving Brain and the Skilful Hand in the United States for the Pacific Historical Review*. Three-quarters of that book focused on technological change and the writings of some rather obscure proponents of railroads and other transportation advances during the nineteenth century. However, on that core of the work Pressly wrote, "This reviewer found parts of this section of the book interesting and suggestive, but he is not a student of technology and is therefore not competent to pass an informed judgement in that area."

Although Malin disliked having his work categorized, today's historians of technology probably would classify him as a "social constructionist." That is, he supported the view that societal needs determined technology rather than understanding technology as originating outside of existing needs. Certainly Malin attempted as did the early self-designated historians of technology to integrate "internalist" examination of engineering concerns with the "externalist" interest in the societal context and impact of technological development. Likewise, he gave attention to technological transfer between cultures. But, on the other hand, he did not dwell on

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40. Malin, "Space and History," 125.
41. James C. Malin, *Winter Wheat in the Golden Belt of Kansas: A Study in Adaption to Subhumid Geographical Environment* (Lawrence: University of Kansas Press, 1944). In this work Malin looks at farmers in Kansas as they adopted the use of hard shell winter wheat and new agricultural implements in their farm operations, all in the context of the natural environment and human ingenuity. For Malin's remarks on the lister, see 293–45. Some of the commentary on Malin's contentions in *Winter Wheat in the Golden Belt of Kansas* are in reviews by Robert G. Dunbar, *Journal of Economic History* 5 (May 1945): 109–10; Louis Bernard Schmitz, *Mississippi Valley Historical Review* 31 (December 1944): 461–63, and Merrill E. Jarchow, *American Historical Review* 50 (January 1945): 373. In his remarks Jarchow points out that "Some readers will challenge the author's [Malin's] position favoring 'the common people following their instincts' against the advice of experts and will disagree with his laissez-faire philosophy. Had the university at Lawrence and the agricultural college at Manhattan been on the same campus, the author might have been exposed to a differing view. None can deny that he provokes thought."
42. In 1958 the Society for the History of Technology was established, and in 1959 Technology and Culture began publication.
the question of whether technology determines society or society determines technology. He understood technology as created by humans to meet their needs. It does not necessarily dictate how the future will unfold for humans. Choices and decisions about technology are made by people. Thus, although Malin denounced determinist interpretations of history, historian Hamilton Holman approvingly concluded that Malin “might be called a human determinist.”

Before closing, however, it must be noted that some recent criticism of Malin’s view of technology has surfaced, although not from historians of technology who seemingly remain ignorant of his studies. The remarks have come from practitioners of the new historical realm of environmental history, who undeniably owe much to Malin’s pioneering mixture of history and ecology. Nonetheless, Dan Flores, while crediting Malin for his dispute with Webb’s assumptions and accepting the concept of “possibilism,” comments that Malin “had an inordinate faith in technological fixes.” More importantly, Donald Worster, another noted environmental historian—and the Hall Distinguished Professor of History at the University of Kansas—has offered that while Malin “was the man who, more than any other, anticipated the emerging ecological synthesis in history,” his “bias and provinciality . . . prevented him from taking a detached view of the culture he was seeking to understand” on the Great Plains. In particular, Worster says that Malin was tied to a form of “technological determinism.” That is, Malin understood technological innovations and their employment as both essential to human society on the Plains and in themselves certainly not necessarily harmful to the environment. And although Allan Bogue, for example, a highly regarded historian of the American West and friend and admirer of Malin, characterized “Worster’s critique” as “one of the crueler efforts to commit intellectual patricide,” Worster’s points are not unfounded. Malin might be seen as overly optimistic about the open-endedness of human ability to utilize properly and profitably the natural environment even if, as Bogue points out, Malin did not reject conservatism theory. For his part, Malin conceded in 1972 that he was “getting a little skeptical about the open system,” but his nascent pessimism applied to biological engineering not to other technology. And at the end of his long career, Malin held what his friend and former student Burton Williams described as a “guarded optimism” about humanity and technology. For Malin, regardless of those who doubted human intellectual and technological capabilities to surmount future challenges, people hold the potential for innovation and change.

In all, Malin’s knowledge of history and technology may be seen as summed up by Fulmer Mood and Avery Craven in their respective reviews of The Contriving Brain and the Skillful Hand in the United States. Mood stated that “the profundity of Malin’s historical thinking and the breadth of his scholarly vision compel admiration.” Less laudatory yet nonetheless impressed, Craven wrote that the study “makes hard reading. His [Malin’s] thinking is involved and complex, and his meaning is not always clear . . . [B]ut what he has to say is arresting and worthy of thought if not always acceptance.” Such appraisals reflect both judicial evaluation and elicited praise. Indeed, Malin’s thoughtful exploration of the role of technology in American history deserves recognition and commendation.

48. Flores explains “possibilism” as implying that “a given bioregion and its resources offer a range of possibilities, from which a given human culture makes economic and lifeway choices based upon the culture’s technological ability and its ideological vision of how the landscape ought to be used and shaped to meet its definition of a good life.” Dan Flores, “Place An Argument for Bioregional History,” Environmental History Review 18 (Winter 1994): 8.

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